**Title: Supply List 4.ONBT.5 (Introducing division) Modified lesson by USD (Use to introduce topic 7)**

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. “Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks.” *Mathematics Teaching in the Middle School 14* (October 2008): 132-138. \*\*\*\*\* Based on Template by A.L.C.

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| **PART 1: SELECTING AND SETTING UP A MATHEMATICAL TASK (PREPARE)** | |
| What are your **mathematical goals** for the lesson? (i.e., what do you want students to know and understand?) | Students will multiply a two digit whole number by a two digit whole number. |
| What are your **expectations** for students as they work on and complete this task?  What **resources or tools** will students have to use in their work that will give them entry into, and help them reason through, the task?  How will the students work— independently, in small groups, or in pairs—to explore this task?  How will students record and report their work? | Students will use paper, whiteboards, and manipulatives to solve the problem.  Students will work in groups of 2-3.  Students will be required to show their thinking by recording their answers on the worksheet.  Students will complete charts to show their work. |
| How will you introduce students to the activity so as to provide access to *all*  students while maintaining the cognitive demands of the task? | **LAUNCH**  Ask the students if they know anyone who works in a store. Ask them what some of their jobs are. Explain to the students that sometimes stores need to take inventory. Today they will be helping a store prepare to take inventory. (If students already know how to use 2 digit by 2 digit multiplication then tell them they can’t use that on this exercise they must find a way to solve the problem using another method. (For example 33 by 12 could be solved 33 x 6 + 33 x 6)) |

Learning Task

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| **PART 2: SUPPORTING STUDENTS’ EXPLORATION OF THE TASK (EXPLORE)** | |
| As students work independently or in small groups, what **questions** will you ask to—  help a group get started or make progress on the task? focus students’ thinking on the key mathematical ideas in the task? assess students’ understanding of key mathematical ideas, problem- solving strategies, or the representations? advance students’ understanding of the mathematical ideas? | What tools will you use to get the answer?  What strategies will you use?  If you can’t multiply two digits by two digits - how can you solve the problem? |
| **PART 3: SHARING AND DISCUSSING THE TASK (DISCUSS/DEBRIEF)** | |
| How will you ensure that students remain **engaged** in the task?  What assistance will you give or what questions will you ask a student (or group) who becomes quickly frustrated and requests more direction and guidance is solving the task?  What will you do if a student (or group) finishes the task almost immediately? How will you extend the task so as to provide additional challenge? | Help the students understand how breaking numbers into numbers they can work with can help them come up with solutions. Let the students use manipulatives to explain their thinking. |
| How will you **orchestrate the class discussion** so that you accomplish your mathematical goals?  Which solution paths do you want to have shared during the class discussion? In what order will the solutions be presented? Why?  What specific questions will you ask so that students will— 1. make sense of the mathematical ideas that you want them to learn? 2. expand on, debate, and question the solutions being shared? 3. make connections among the different strategies that are presented? 4. look for patterns? 5. begin to form generalizations?  ***What will you see or hear that lets you know that all students in the class understand the mathematical ideas that you intended for them to learn?*** | Learners will:  Fill in their math task worksheets and be able to explain how they came up with their answers.  Share with partners and a select few will share with their class their thought processes and their answers.  Continue with extension activities if they finish early. |

The manager of a local supply store needs to inventory some of their school supplies. Help the manager figure out how many of each of the following items they have.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Picture** | **Item** | **Cases** | **Qty/Case** | **Total Quantity** |
|  | Pencils | 5 | 25 |  |
|  | Pens | 10 | 15 |  |
|  | Erasers | 12 | 50 |  |
|  | Notebooks | 9 | 20 |  |
|  | Markers | 15 | 12 |  |
|  | Glue Bottles | 20 | 11 |  |
|  | Folders | 18 | 21 |  |

Extension Activity: If you added 2 more cases to each item, how many of each item would you have?

Learning Task Answer Sheet

The manager of a local supply store needs to inventory some of their school supplies. Help the manager figure out how many of each of the following items they have.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Picture** | **Item** | **Cases** | **Qty/Case** | **Total Quantity** | **Extension**  **Answers** |
|  | Pencils | 5 | 25 | 125 | 175 |
|  | Pens | 10 | 15 | 150 | 180 |
|  | Erasers | 12 | 50 | 600 | 700 |
|  | Notebooks | 9 | 20 | 180 | 220 |
|  | Markers | 15 | 12 | 180 | 204 |
|  | Glue Bottles | 20 | 11 | 220 | 242 |
|  | Folders | 18 | 21 | 378 | 420 |

Extension Activity: If you added 2 more cases to each item, how many of each item would you have?